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DT14 Rec'd PCT/PTO 12 JUL 2003

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July 12, 2003
Date of Certificate

Joseph B. Kejha
Signature

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In re the Patent Application of :

Joseph B. Kejha

Serial No. : 09 / 350,713

Filed : July 9, 1999

Title : Hydrogen - Electric Hybrid
Vehicle Construction

Art Unit : 3611

Examiner : F. Vanaman

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
P.O. Box 1450
ALEXANDRIA, VA. 22313-1450

July 12, 2003
Meadowbrook, PA. 19046

Sir :

In the above matter, enclosed herewith please find :

- (1) Page Letter , dated 7-11-2003
- (4) Pages of my Letter to the US Dept. of Energy , dated 12-8-2002
- Post card receipt

Respectfully submitted,

Joseph B. Kejha

JOSEPH B. KEJHA (applicant)
1022 Frederick Rd.
Meadowbrook, PA. 19046
Tel. 215-947-8019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Patent Application of :
JOSEPH B. KEJHA
Serial No. : 09 / 350,713
Filed: July 9, 1999
Title: Hydrogen-Electric Hybrid
Vehicle Construction

Art Unit : 3511
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LETTER

Commissioner for Patents
P.O. Box 1450
ALEXANDRIA, VA. 22313-1450

July 11, 2003
Meadowbrook, PA.


Dear Sir :

In the above matter, I would like to bring to your attention a few secondary considerations, related to this pending Patent Application, and which considerations I request be put on the record at the US PTO and be considered by the Examiner.

I hereby enclose a copy of my Letter to the US Department of Energy (4-pages), dated 12-8-2002. In this letter I explained the benefits to the United States, as a result of this invention.

It is also self-evident, that the use of hydrogen as a vehicle fuel would free the United States from the dependence on the foreign oil, and that the long range vehicle of this invention makes the use of hydrogen fuel practical and possible.

Respectfully submitted,


Joseph B. Kejha
(Applicant)
1022 Frederick Rd.
Meadowbrook, PA. 19046
Tel. 215-947-8019

Mr. John Augustine
Unsolicited Proposal Manager
US Dept. of Energy
National Energy Technology Laboratory
P.O. Box 10940 , MS-921-107,626
Cochrans Mill Rd.
PITTSBURGH, PA. 15236-0940

12-8-2002
Meadowbrook, PA.

SH.1
4/2

Dear Mr. Augustine,

I am following-up on my conversation and e-mail with Ms. Linda Weightman, who advised me to send you our unsolicited proposal and information about our company and our project.

ELECTRION, INC. is an intellectual property company, registered in Pennsylvania and owns several inventions in the field of alternative fuel vehicles.

We are looking for financial assistance under the DOE Unsolicited Proposal Program for development of our patents pending scooter or motorcycle and later a car, based on the same propulsion system. We chose the scooter first, because it is the least costly and will equally prove our ideas and the invention principles of our **long range and zero emissions vehicle**.

We have built a partial proof-of-concept advanced vehicle, but our goal now is to complete the system and build two different production prototypes within one year, starting April 1, 2003, which will pass the state inspections etc.. One will be an advanced, unique scooter, and the other will be a classic, conventional frame scooter. Both with the same propulsion system, but intended for different markets, to guarantee commercial success.

For a large part execution of this task we are subcontracting an experienced racing motorcycle builder and a large scooter dealer, COSMOPOLITAN MOTORS, INC. in Hatboro, Pennsylvania.

CONFIDENTIAL :

We have an unique and innovative idea, although it is a combination of several individually known systems. Our propulsion system is based on hydrogen-electric hybrid with IC engine, not with fuel cell. Hydrogen is stored under low pressure, and is produced from the existing infrastructure. To our best knowledge, no one proposed this system *before* our patents applications, nor reduced it to practice. We have found, that the expensive fuel cell is not needed to have an equivalent range as gasoline, and our system will not deplete the world's supply of platinum. Needless to say, this system can be installed into any vehicle.

Our vehicles also have safer, energy absorbing, recyclable frames and body panels, both of which are 30% lighter than aluminum, thus further increasing the range. We realize, that the scooters will not make a dent in cleaning the air in the U.S., but we need them to get the national attention at minimal cost. Nothing is more convincing than a working example at the auto-show or conference...

SH-2
4/2

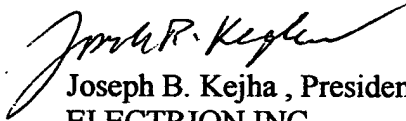
Please find enclosed the Scientific and Technological Merit chapter and more information about the Electrion , Inc.

Kindly let us know if we qualify on its own merit for your funding.

Due to possible huge impact of this project on the U.S. economy , no dependence on foreign oil , and clean air improvement, we think it should deserve the highest priority and therefore we ask for 80% DOE funding. We already received \$60,000 Alternative Fuel Grant from Pennsylvania Department of Environmental Protection for 20% of the project. The total est.cost is \$ 300,000.

I can be reached at (610)-522-5960 ext. 19 and cell (267)-334-3155 , or (215) 947-8019.

Sincerely ,


Joseph B. Kejha , President
ELECTRION, INC.
1022 Frederick Rd.
Meadowbrook, PA. 19046

Scientific and Technological Merit (CONFIDENTIAL)

ELECTRION'S HYDROGEN-ELECTRIC HYBRID VEHICLES

Prior art zero emissions vehicles are basically of four types :

- a. Pure electric only, with a large battery and electric motor ;
- b. Internal combustion (IC) engine only , fueled by hydrogen ;
- c. Electric hybrid with battery , electric motor and fuel cell, fueled by hydrogen ; and
- d. Pure fuel cell and electric motor , fueled by hydrogen.

All of the above vehicles have technical or economical barriers preventing their widespread use :

*The electric only vehicles have usually short range , unacceptable recharge time, and high cost of large battery.

*The IC engine only vehicles fueled by hydrogen have also short range due to bulky and heavy hydrogen storage.

*The electric hybrid with battery and fuel cell have unacceptable cost , due to platinum catalyst in the fuel cell.

*The pure fuel cell vehicle is even more costly than the hybrid , since they require even more platinum for high current.

Electrion Inc. has found , that long range and zero emissions vehicle can be made economically and overcome all of the prior art barriers and disadvantages, and especially the high cost of fuel cell and short range of hydrogen fueled IC only, or electric only vehicles , by internal combustion hydrogen-electric hybrid configuration with ultralight and low drag body.

Other advanced features include safer , energy absorbing magnesium frame built from extrusions joined by roll pinned fittings and adhesive , avoiding thus expensive welding ; and low cost, plasma treated high density polyethylene body panels with fluoropolymer paint. Both are 30 % lighter than all aluminum body and are recycleable.

The preferred electric hybrid is the self charging , in-series type , having only 1/3 size IC engine than the engine required for IC only vehicle.

This means , that the same amount of hydrogen will provide 3X longer range.

For example : full size IC engine fueled by hydrogen provides short 120 miles range in a car and 35 miles in a scooter or motorcycle. Hydrogen-electric hybrid configuration will provide 360 miles in a car and 105 miles in a scooter.

The additional 10% + range is achieved by lightweight and low drag body, having 400 miles long range car and 120 miles long range scooter or motorcycle , which is the same range as gasoline fueled vehicles have , except the Electrion's vehicles are ZEVs.

(The small amount of NOx generated is captured by a miniature catalytic converter.)

There is no transmission, shifting, nor mechanical connections between the engine and the wheels. Variable speed, high torque electric disc motor is controlled through electronic controller only, by wrist or foot pedal.

The preferred battery is lithium-ion rechargeable battery with ultracapacitor, having the highest energy and power density, as well as cycle life. The battery is much smaller and less costly than pure EV battery (preferably 1/3 size), and does not require outside charging, since it is recharged by the generator (connected to the IC engine) during cruising. The engine stops when the vehicle stops to save fuel, and starts instantly by the generator turned into a second motor, on pedal or wrist command for acceleration.

Another advanced feature of the vehicle is hydrogen production and low pressure storage, both in the vehicle, which comprise a small, KOH based, high rate, low pressure electrolyzer and a vessel containing metal hydride mixed with graphite for fast absorption. Both are water cooled. (Again, no platinum is used). To refuel hydrogen anywhere from the existing infrastructure, water is filled into the electrolyzer and a cable is plugged into an electrical socket. It can be done in 10 minutes, as opposed to hours of EV charging. This is based on the known H₂ absorption into the metal hydride, and due to high surface electrodes in the electrolyzer, and cooling. Apparently, this fueling system can be used also in many other applications or products.

It should be noted, that one gallon of water contains about the same H₂ energy as one gallon of gasoline. Hence the name: "Hydro-electric vehicles".

What is novel and unique in our system is that the short range of hydrogen fueled IC engine vehicle can be overcome by electric hybrid configuration.

This gives us an unexpected result. No one proposed it before, because the electric hybrid was first intended only for extending of the range of battery powered vehicle, and later for extending of the range of gasoline fueled IC engine vehicle. We believe, that this concept is a cost effective and near term achievable alternative to slow progressing fuel cell system, and unlike the fuel cell vehicles, these vehicles will not deplete the world's supply of platinum.

Joseph B. Kejha

USE AND DISCLOSURE OF DATA:

This abstract includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this abstract. However, if a contract is awarded to this offeror as a result of-or in connection with-the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit Government's right to use information contained in these data if they are obtained from another source with restriction. The data subject to this restriction are contained in this chapter, cover letter to DOE Unsolicited Proposal Program Manager dated 12-8-2002, and one photograph of Electrion's proof-of-concept vehicle enclosed.